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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,494	10/27/2003	Masaru Ishikawa	US01-03014	3140
21254	7590	09/21/2004	EXAMINER	
MCGINN & GIBB, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			DINH, JACK	
			ART UNIT	PAPER NUMBER
			2873	

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/693,494

Applicant(s)

ISHIKAWA ET AL.

Examiner

Jack Dinh

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0103.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: DETAILED ACITON.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 7, 8, 16 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Regarding claims 7 and 16, the phrase “perspective feeling” renders the claim indefinite. It is unclear what is being claimed.

(b) Regarding claims 8 and 17, the phrase “moving image” renders the claim indefinite. It is unclear which component would have caused the image to move.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-3 and 9-12 are rejected under 35 U.S.C. 102(a) as being unpatentable by Clarke (US Patent 6,462,795).

(a) Regarding claim 1, Clarke (figure 1) is interpreted as disclosing an image display apparatus comprising a display 10 having an image display surface 11 which displays a two-dimensional image of an object including a three-dimensional object, and an image transmitting panel 14 spaced apart from the image display surface for creating an imaging plane 12 displaying a real image of the two-dimensional image in a space opposite to the display, wherein the image transmitting panel and the imaging plane are non-parallel with each other.

(b) Regarding claim 2, Clarke is interpreted as further disclosing that the image transmitting panel includes at least one micro lens board 20, 21, 22, each micro lens board having an array of a plurality of micro lenses 24, 25, 26 arranged two-dimensionally, the micro lenses define a lens system having a pair of convex lenses coaxial with each other, and optical axes of the lens systems are parallel with each other (col. 4, lines 33-35).

(c) Regarding claim 3, Clarke is interpreted as further disclosing that the image display surface of the display is positioned within a focal depth of the plurality of lenses (col. 4, lines 44-61).

(d) Regarding claim 9, Clarke is interpreted as further disclosing that the apparatus includes a plurality of arrays of micro lenses connected to the image transmitting panel at a predetermined angle for creating a plurality of imaging planes (col. 4, lines 6-8).

(e) Regarding claim 10, Clarke (figure 1) is interpreted as disclosing an image display apparatus comprising a display 10 having an image display surface 11 which displays a two-dimensional image of an object including a three-dimensional object, and an image transmitting panel 14 spaced apart from the image display surface for creating an imaging plane 12 displaying a real image of the two-dimensional image in a space opposite to the display, wherein the apparatus includes a non-parallel area (upper and lower) in which the image transmitting panel and the imaging plane are non-parallel with each other, and a parallel area (center) in which the image transmitting panel and the imaging plane are parallel with each other.

(f) Regarding claim 11, Clarke is interpreted as further disclosing that the image transmitting panel includes a micro lens board 20, 21, 22 having an array of a plurality of micro lenses 24, 25, 26 arranged two-dimensionally covering the non-parallel area and the parallel area, the micro lenses define a lens system having a pair of convex lenses coaxial with each other, and optical axes of the lens systems are parallel with each other (col. 4, lines 33-35).

(g) Regarding claim 12, Clarke is interpreted as further disclosing that the image display surface of the display is positioned within a focal depth of the plurality of lenses (col. 4, lines 44-61).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2873

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4-6 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clarke (US Patent 6,462,795), as applied in claims 2 and 11.

(a) Regarding claims 4 and 13, Clarke is interpreted as disclosing all the claimed limitations, as described above, except that the image display surface of the display is positioned at a non-right angle to the optical axes of the lens systems. However, Clarke (figure 1) discloses the teaching of an angled imaging plane **12** in combination with the microlense **22** to compensate for the angle. It is well known within the art that a display surface can be angle as desired provided that the image transparent panel is designed to compensate such modification. In addition, the Applicant has not disclosed any unexpected results this configuration would produce over those of the prior art. Therefore, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to have the display surface positioned at a non-right angle to the optical axes of the lens systems, for design choice purposes.

(b) Regarding claims 5 and 14, Clarke is interpreted as disclosing all the claimed limitations, as described above, except that the imaging plane has a flat shape and inclines toward the array of the micro lenses. However, Clarke discloses the teaching that the imaging plane can be arranged non-symmetrically and that different curvatures may be used (col. 4, lines 6-8). Therefore, it would have been obvious to one of ordinary skilled in the art at the time the invention was made to provide a inclined flat shape imaging plane, for design choice purposes.

Art Unit: 2873

(c) Regarding claims 6 and 15, Clarke (figure 1) is interpreted as further disclosing that the plurality of lenses have focal lengths in an image side such that the imaging plane **12** has a curved shape and inclines toward the array of the micro lenses.

Other Information/Remarks

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Yoshikawa et al. (U.S. Patent 6,462,794) discloses image transmitting panels with coaxial convex lenses.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack Dinh whose telephone number is 571-272-2327. The examiner can normally be reached on M-F (9:30 AM - 6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jack Dinh


Georgia Epps
Supervisory Patent Examiner
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